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(71) Applicants

**Tien-Fa Pai**  
 7 Alley 28 Lane 281 Huacheng Road, Hsinchuang,  
 Taipei Hsien, Taiwan, Province of China

**Ming-Kun Lai**  
 7 Alley 28 Lane 281 Huacheng Road, Hsinchuang,  
 Taipei Hsien, Taiwan, Province of China

(72) Inventors

**Tien-Fa Pai**  
**Ming-Kun Lai**

(74) Agent and/or Address for Service

**Langner Parry**  
 52-54 High Holborn, London, WC1V 6RR,  
 United Kingdom

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**A4K KDC**  
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(58) Field of search

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**INT CL<sup>4</sup> A46B**

(54) **Toothbrush**

(57) A toothbrush is provided with a brush portion (5) in the form of a unitary plastics moulding, the moulding having an array of flexible projections (501) formed therein and being anchored to a portion (2) of the toothbrush handle (1) by projections (301) which are received within tapered holes previously formed in the handle (1). The projections (501) preferably taper towards their extremities and may be rounded at their tips. The brush portion (5) may be formed by moulding suitable plastics material in contact with the previously formed handle (1).

The toothbrush is suitable for use by persons with gum disease, since it reduces abrasion of the gums whilst providing a satisfactory cleaning action.

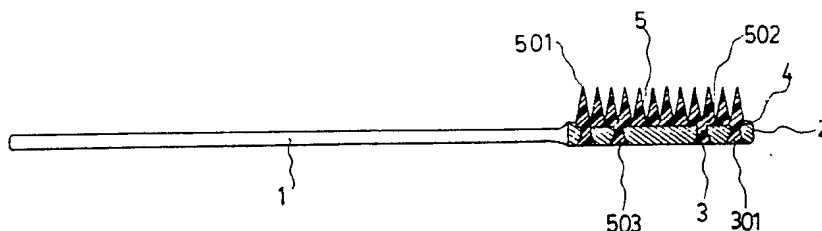


Fig. 1

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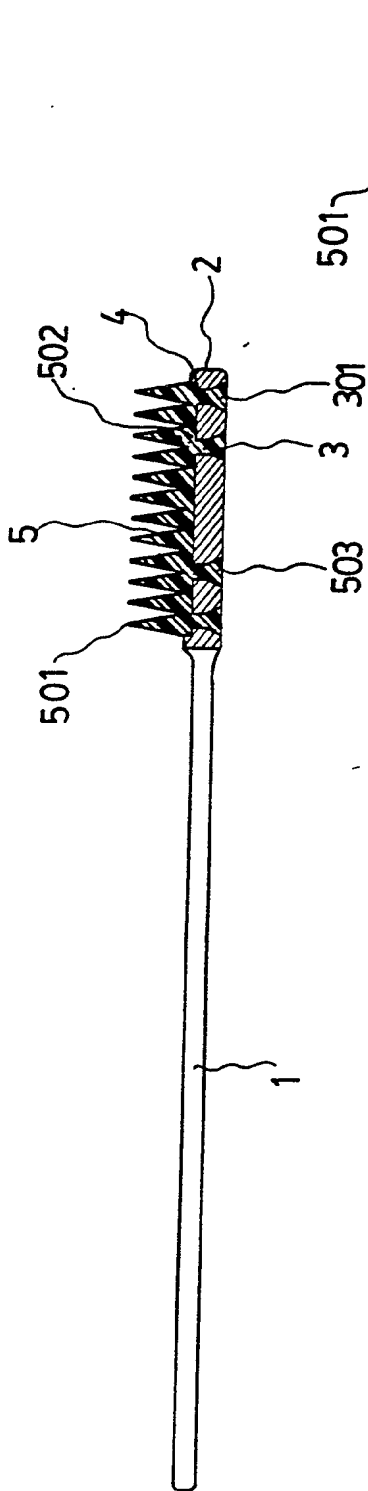


Fig. 1

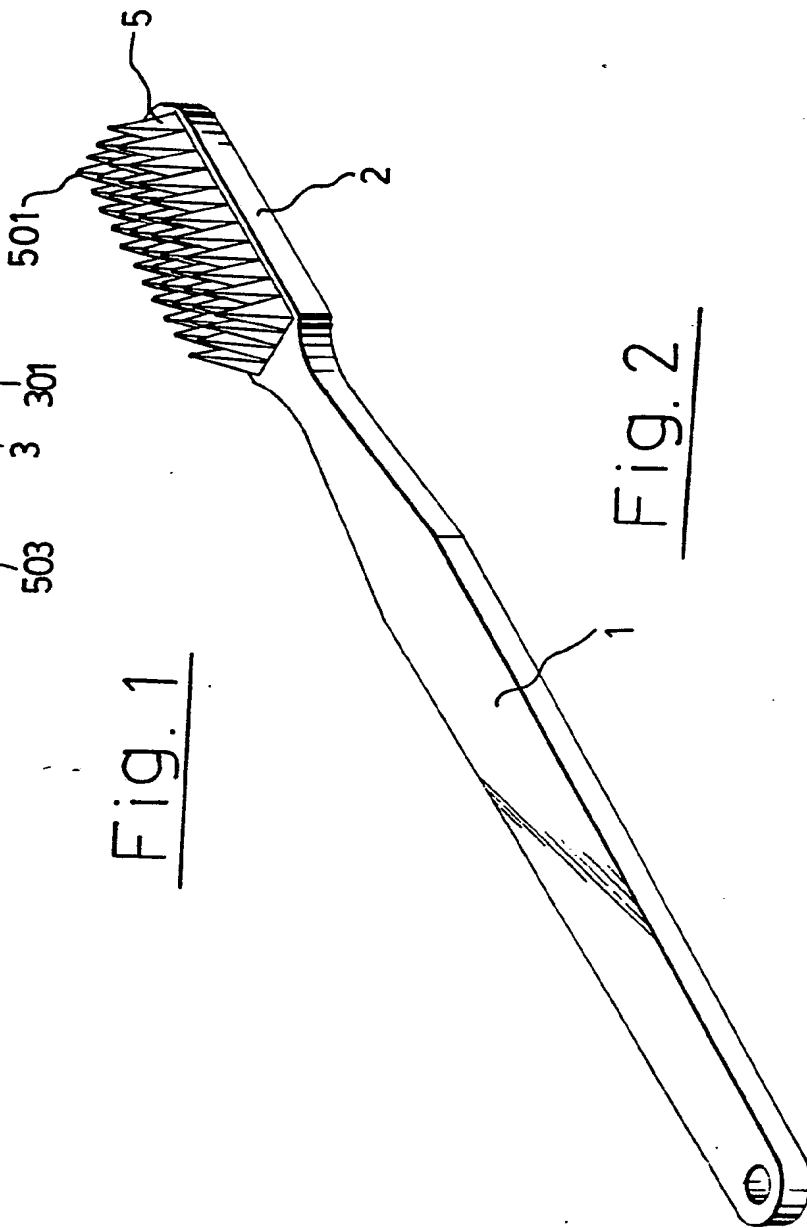


Fig. 2

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TOOTHBRUSH

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The present invention relates to toothbrushes.

An object of the present invention is to provide an improved toothbrush, which is particularly suitable for use by persons with gum  
5 disease.

Known toothbrushes comprise bundles of bristles embeded in one end of a handle portion and in use frequently cause gum bleeding. When such toothbrushes are used regularly by persons having diseased gums,  
10 their gums have no opportunity of recovery.

The invention provides a toothbrush having a brush portion in the form of a unitary plastics moulding, said moulding having an array of flexible projections formed therein.  
15

Preferably, said flexible projections taper towards their extremities, and may be triangular in transverse cross section, for example.

20 Preferably, the tips of the flexible projections are rounded, to a part-spherical shape for example.

Toothbrushes in accordance with the invention cause less abrasion to the gums than conventional toothbrushes. It is believe that the  
25 spaces between the tapered projections function to mix toothpastes, moisture and plaque resulting in the efficient production of a fine foam which results in efficient cleaning of the teeth.

A preferred embodiment of this invention is described below by way  
30 of a example of only, with reference to figures 1 and 2 of the accompanying drawings of which:

Fig. 1 is a longitudinal cross section of a toothbrush in accordance with the invention, and

35 Fig. 2 is a perspective view of the toothbrush of Fig. 1.

As shown in Fig. 1 the toothbrush comprises a handle 1 which has a shallow groove 4 at its distal end which receives a unitary plastic moulding 5 having tapered flexible projections formed therein which extend from a base portion 502. Holes 3 are formed in the brush seat 2 of the handle 1. The cross section of the holes 3 increases in the direction away from the moulding 5 and accordingly integrally moulded projections 503 from moulding 5 anchor the brush portion in the brush seat 2. The brush portion 5 is formed by moulding suitably soft plastics material in contact with the previously formed handle 1 so that the material of the brush portion fills the holes 3. The tips 501 of the flexible projections from the brush portion 5 are part-spherical form and ensure that undue abrasion of the gums does not occur in use.

As shown in Fig. 2, the transverse cross section of the projections is triangular. The tapered configuration of the projections ensures that the area of contact between brush portion and gums increases as the brush portion is pressed harder against the teeth, so as to alleviate undue pressure and abrasion on gums.

The plastic material used for forming the moulding 5 may be formulated to adjust the softness to a required value, and the choice of materials and blending is considered to be a matter within the competence of persons skilled in the art.

The degree of taper of the projections from the brush portion 5 should be chosen so as to optimize the brushing action, consistent with reasonable strength of the projections.

CLAIMS:

1. A toothbrush having a brush portion in the form of a unitary plastics moulding, said moulding having an array of flexible projections formed therein.
- 5 2. A toothbrush according to claim 1, wherein said flexible projections taper towards their extremities.
3. A toothbrush according to claim 1 or claim 2, wherein said flexible projections are rounded at their tips.
- 10 4. A toothbrush according to any preceding claim wherein said moulding is anchored to a handle portion of the toothbrush by one or more interengaging projections and recess configurations of said moulding and handle portion which prevent the moulding being separated  
15 from handle portion.
5. A toothbrush as claimed in claim 5, wherein said moulding is moulded in contact with said projection and recess configurations.
- 20 6. A toothbrush substantially as described hereinabove with reference to and as illustrated in the accompanying drawings.